Voting for Trump and the electoral mosaics of US metropolitan areas: exploring changing patterns of party support by neighborhood

ABSTRACT. The socio-spatial structure of US metropolitan areas is the foundation of their electoral geographies: political parties and their candidates draw their support from separate groups within society whose spatial segregation is reproduced in voting patterns. As a consequence, when there are changes in a party's support base these should be reflected in its electoral landscape. The extent of such changes is explored here in analyses of precinct-scale voting patterns at the 2008, 2012 and 2016 US presidential elections across 373 SMSAs. Eight types of electoral mosaics are identified using a cluster analysis of those SMSAs and their distribution explored in the context of their socio-economic and -demographic characteristics. Of the eight types, the SMSAs in four showed little change in the voting profiles of their precincts between 2012 (Obama's second victory) and 2016 (when Trump won in the Electoral College but lost the popular vote); SMSAs in the other four types experience considerable change, with many more rustbelt SMSA precincts delivering a Republican landslide at the latter contest.

KEYWORDS: electoral geography; spatial polarization; landslide victories; SMSAs; precincts; Trump

The patterning of residential segregation along three main dimensions – socio-economic class, family/household structure, and ethnicity – is a well-established feature of United States' urban areas. That structuring has been linked to their electoral geographies; given the tendency for different groups within society to vote for candidates of different parties – such as the strong support given by Blacks to the Democratic Party's candidates at recent presidential elections – the maps of residential segregation are to a considerable extent reproduced in those of voting. Cities are segregated/polarised both by their population characteristics and by support for the political parties.

But what happens when one or more groups that has formerly strongly supported a party's candidates fractures, with a substantial proportion of members switching to another party? What changes resulting from such switches are revealed in the country's electoral landscapes? This paper explores answers to those questions, focusing on changes to the electoral mosaics of individual US metropolitan areas across the two elections when Democratic Party candidate Barack Obama was successful (2008 and 2012) and the subsequent contest (2016) won by Republican candidate, Donald Trump. Was the swing towards the Republican Party in 2016 reflected in the electoral mosaics of all of the country's metropolitan areas, or was it a feature of some places only – and if so, were they concentrated in particular parts of the country and in metropolitan areas with particular population compositions? To answer that, this paper uses data at the precinct scale for voting at the three most recent presidential elections, classifying metropolitan areas according to their changing electoral mosaics at those contests to identify where major variations to their internal electoral landscapes occurred.

Residential segregation and electoral polarization

Residential segregation, and the consequent electoral polarization, has increased recently in the United States according to Bishop (2009); the latter claim regarding electoral polarization, although contested (e.g. Abrams and Fiorina, 2012), has been sustained using national data at the county scale (Johnston et al., 2016; Lang and Pearson-Merkowitz, 2015) and by a detailed analysis of

changes by state and Congressional District (Hopkins, 2017) as well as in analyses of particular places (e.g. Kinsella et al., 2015; Myers, 2013; Sussell, 2013). This segregation/polarization has come about, Bishop argued, because of selective migration; individuals and households are increasingly clustering into neighborhoods containing similar people, which might include their political predispositions (see also Delmelle, 2017; Gimpel and Hui, 2018), resulting in more neighborhoods where one party dominates. Thus, according to Bishop (2009, 40):

> The country may be more diverse than ever coast to coast. But look around: our own streets are filled with people who live alike, think alike, and vote alike. This social transformation didn't happen by accident. We have built a country where everyone can choose the neighborhood (and church and news shows) most compatible with his or her lifestyle and beliefs.[1] And we are living with the consequences of this segregation by way of life: pockets of like-minded citizens that have become so identically inbred that we don't know, can't understand and can barely conceive of "those people" who live just a few miles away.

He termed that clustering the 'Big Sort' and claimed that 'the simplest way to describe this political big sort was to look across time at the proportion of voters who lived in landslide counties – counties where one party won by 20 percentage points or more' (Bishop, 2009, 9).

The data Bishop used to evaluate his argument were thus at a coarser spatial scale than that at which the processes are assumed to occur: many counties are extensive and, in urban areas, have large populations so that their spatial organization is not commensurate with the neighborhood patterning Bishop identifies (see also Hui and Cho, 2017).[2] The 'streets … filled with people who live alike, think alike, and vote alike' are much more restricted in scale than counties, and so no detailed mapping of his proposed mosaics – described with his detailed case study material – has been possible, apart from a small number of case studies such as those cited above. This paper uses a bespoke data set of voting by precinct for the 2008, 2012 and 2016 presidential elections to fill that major lacuna, examining the internal electoral landscapes of the largest US metropolitan areas and exploring the extent to which that changed in 2016, and where.

The 2016 election

In the decades preceding the 2016 presidential election there was a settled pattern to voting for the two parties' candidates – including a settled electoral landscape. At the state scale that landscape comprised, for example: 'red states', which provided a plurality of votes for the Republican candidates; 'blue states', where the Democratic candidate almost invariably won a plurality; and 'swing (or purple) states', where the winning party varied (Ansolabehere et al., 2006; Gelman, 2008). Those 'swing states' were crucial to each election's outcome; the more of them won by one party's candidate the more likely her/his success in the Electoral College.

The 2016 election was presented by some as deviating from this pattern somewhat, with the Republican Party candidate, Donald Trump, campaigning for support well outside his party's usual electoral hinterland (Johnston et al., 2017). His form of economic nationalism was aimed at the blue-collar, white section of the electorate (on which see Bhambra, 2017), many of whom had traditionally voted for the Democratic Party's candidates. The de-industrialisation of many parts of the United States, along with the decline of production in many coalfields, had damaged the incomes, employment prospects and life chances of many of those people and their households, and he campaigned on a platform to reverse that situation. In this scenario, immigrants were presented as a threat to many households' livelihoods; Trump's campaign slogan that he would 'put America

[1] This, of course, is far from the case: most households' choices within the housing market are limited because of resource constraints – for some the choices of accessible neighborhoods are few.

[2] Bishop's argument regarding selective migration has been challenged (e.g. Abrams and Fiorina, 2012), although it is sustained by one empirical case study (Cho et al., 2013; Gimpel and Hui, 2015, 2018).

first' in effect meant putting 'white America first'. (On Trump's supporters, see Ashcroft, 2017; Levine, 2017.)

Trump's success – he won in the Electoral College thanks to narrow victories in several large 'swing states' but lost the 'popular vote' by some three million to his Democratic Party rival – was not the result of a major fracturing of America's well-established voting patterns and electoral mosaics, however. He retained the support of most traditional Republican voters, winning all of the 'red states', and his victory was largely the result of extending that support base, mainly in counties where the Republicans had won a majority of the votes cast at the most recent presidential elections (on which see Johnston et al., 2017).

This is illustrated by Figure 1, which, for the 373 SMSAs for which we have assembled voting data to be analysed here,[3] graphs Trump's support against the average percentage of the votes cast won by his predecessors at the six previous presidential elections. (In a principal components factor analysis, the percentage of the two-party vote won by Republican candidates in each SMSA loads very strongly – the smallest loading is 0.88 for 1992 – on a single component that accounts for 88 per cent in the variation, hence the use of the six-election mean vote here.) The graph is divided into six segments: the vertical line divides the SMSAs according to whether the Republican candidates averaged either more or less than 50 per cent of the two-party votes between 1992-2012; the horizontal line divides them according to whether Trump won more or less than 50 per cent in 2016; and the diagonal divides them into those where Trump outperformed his predecessors' average (above the diagonal) and those where he did not (below the diagonal). Just over 40 per cent of the SMSAs fall into the first change type identified on the graph – those where Republicans have traditionally been the largest party, where Trump gained a majority of the two-party votes, and where he also performed better than his predecessors' average. The same number of SMSAs (154) occupied the three categories (2, 3 and 4: those below the diagonal) where Trump under-performed relative to his party's previous candidates.

The six types of SMSA identified in Figure 1 according to their pattern of voting Republican at recent presidential elections are not uniformly distributed across the country; some are concentrated in particular census divisions, and some divisions have a preponderance of particular types (Table 1). For example, New England has no SMSAs in types 1, 2 and 3 (i.e. the Republicans on average did not win a majority at the six elections 1992-2012 in any of the SMSAs there), and half of the SMSAs in type 6 – places where Trump won a majority but his predecessors on average did not – are in the East North Central division. The latter – the rustbelt states of Illinois, Indiana, Michigan, Ohio, and Wisconsin – includes many of the deindustrializing blue-collar communities where Trump focused much of his campaigning. And nearly half of the type 1 SMSAs, where Trump increased on the Republican's average majority, are in the South Atlantic division.

Polarized precincts

What happened within those SMSAs with different aggregate patterns of change: did they also differ in the extent of changes to their internal electoral mosaics? To explore answers to that question we use Bishop's measure of polarization – a landslide, defined as a victory by 20 percentage points or more – but at the much smaller precinct scale, which allows analysis of neighborhoods within SMSAs. Given that the United States does not possess a central aggregating agency for precinct-level election data, and nor do many states, collection of precinct-level results for the 2012 and 2016

[3] We are grateful to Clark Archer, Fred Shelley and Bob Watrell for allowing us to use the county-scale data set they compiled for presidential elections between 1992 and 2016 in this research (see Johnston et al., 2016). Not all of the SMSAs are deployed in some of the subsequent analyses here, because of the unavailability of certain data.

presidential elections required contacting the relevant electoral authorities in each state and county as needed. In most cases, state Secretaries of State or Election Boards provided state-wide precinct results, but several states required contacting each county's electoral authority independently, namely Colorado, Indiana, Michigan, Missouri, New Jersey, New York, and Pennsylvania. Kansas, Kentucky, Oregon, and West Virginia required county-specific contact for a minority of counties. (On these data see Chen and Rohla, 2018; Rohla et al., 2018.) Most electoral authorities provided results without charge via email or fax, but units such as Utah and many counties in Missouri required fees for access to their data. The Harvard Election Data Archive supplied precinct-level results for the 2008 presidential election. No comparable data were available for earlier elections.

The number of precincts varied across the three elections. The SMSAs had a total of 146,597 in 2008, where the mean number of votes cast was 745; there were 133,132 precincts in 2012, with a mean of 773 votes cast; and in 2016 there were 135,207 with a mean of 777 votes. Because the number of precincts changed between each election in many counties and most SMSAs, which meant that their boundaries were redrawn, it is not possible to analyse and map change at that scale. The analyses reported here thus present the gross pattern at each date.

Precincts are categorised at each of the three presidential elections – 2008, 2012, and 2016 – according to whether they returned a Democratic landslide (i.e. the Democratic Party candidate led the Republican candidate by 20 percentage points or more of the two-party vote), a Republican landslide, or had no landslide (i.e. the difference between the two parties was less than 20 percentage points). Table 2 shows that at each date some 40 per cent of all SMSA precincts returned a Democratic landslide; over the three elections there was an increase in the percentage with a Republican landslide and a corresponding decline in the percentage of precincts with a landslide for neither party. (For comparison, in non-metropolitan parts of the country outside the SMSAs, precincts returning a Democratic landslide were only 15 per cent of the total in 2008, falling to 12 per cent in 2012 and 8 per cent in 2016. There was also a decline in the non-landslide precincts, from 41 per cent in 2008 through 33 in 2012 to 18 in 2016. Republican landslide precincts dominated the non-metropolitan United States by the end of the period – 45 per cent of the total in 2008, 54 per cent in 2012, and 74 per cent in 2016.)

For each SMSA, therefore, we have nine pieces of information – the percentage of its precincts that returned a Democratic landslide, a Republican landslide, and no landslide at each of the three elections. To explore the extent of any differences between them, the SMSAs were classified according to their profiles across those nine values, using the SPSS© k-means algorithm. After examination of several solutions, an eight-cluster classification was adopted as separating out clearly-identifiable clusters with substantially different profiles. Table 3 shows their centres according to their average values on the nine variables: for example, the median SMSA in cluster 1 had 90.5 per cent of its precincts returning a Democratic landslide in 2008 and 88.2 per cent in 2012. The geographical distribution of those clusters by census division is shown in Table 4. Figure 2 and Table 5 cross-classify the eight clusters with the six types identified in the classification of SMSAs produced in Figure 1 according to their aggregate patterns of voting in 2016 and the mean for the previous six elections.

Members of most of the eight clusters are concentrated in different parts of the graph (Figure 2). For example, those in cluster 2, where most precincts returned a Republican landslide, are all in the upper right quadrant. Those SMSAs had Republican majorities in both 2016 and the average for the preceding six elections; additionally, in almost all of them Trump outperformed his predecessor Republican candidates (most of the SMSAs are above the diagonal line). Those in cluster 1, on the other hand, are all in the lower left quadrant and all but one is below the diagonal: the SMSAs where most precincts returned a Democratic landslide at all three elections are where

Republican candidates have traditionally performed badly, and – in all but one case – where Trump performed even less well than his predecessors.

Turning to their geography, Table 4 shows that members of none of the eight clusters are uniformly distributed across the United States' nine census divisions. Over half of the eleven in cluster 1, where most precincts delivered Democratic landslides at all three elections, are in the Pacific division, for example, and only three are located to the east of the Rocky Mountains. The two divisions in the country's northeast (New England and Mid Atlantic) have none of the forty SMSAs in cluster 2, those with a Republican landslide in the majority of precincts at all three dates. Cluster 7 comprises forty SMSAs that experienced considerable change in their internal electoral geographies across the three elections, with the percentage of precincts returning a Republican landslide almost quadrupling: almost half are in the East North Central division, comprising the five rustbelt states of Illinois, Indiana, Michigan, Ohio and Wisconsin.

There were substantial variations across the country's SMSAs in the degree to which their electoral mosaics changed over the three elections ending in Trump's 2016, victory, therefore. The following sections consider the nature of those differences and explore what types of SMSA experienced what type of change.

Eight types of SMSA changing electoral mosaics

The eight clusters fall into four main categories with different profiles, with the differences between the pair within each of the four reflecting the intensity of the patterns. Clusters 1 and 2 respectively comprise those SMSAs with little change across the three elections, for example, and where the Democratic and Republican parties respectively dominated across the precincts.

The first cluster – *Rock-Solid Democrat* – contains just eleven SMSAs concentrated in four of the country's nine census divisions, with six in the Pacific division (Table 4); they include the two Hawaiian SMSAs (long a bastion of Democratic support), Boulder, CO, and seven (in California, New Mexico and Texas) with large Hispanic populations. The great majority of their precincts returned a Democratic landslide at each of the three contests; 81 per cent of Boulder's precincts returned a Democratic landslide in 2008, 78 per cent in 2012 and 88 per cent in 2016.. Not surprisingly, nearly all are in type 4 in the classification of SMSAs according to their overall voting patterns (Table 5 and Figure 2): they are places where the Republicans have traditionally performed badly and where Trump made few or no gains.

By contrast, cluster 2 – *Rock-Solid Republican* – comprises a larger group of SMSAs (40) where the Republicans won by a landslide in more than 80 per cent of the precincts at each election. None are located in three of the divisions – New England, Mid Atlantic, and Pacific; there is a substantial number in the Mountain division (including three in Utah – Ogden-Clearfield, Provo-Orem, and St. George: 86, 83 and 96 per cent of St George's precincts returned Republican landslides at the thre elections respectively) but the majority are in the East South Central, West South Central and South Atlantic divisions. Many are relatively small: their mean population at the 2010 census was just over 217,000 – the smallest for the eight clusters. They are places where the Republicans established hegemony from the 1970s on following the collapse of the Democratic Party's New Deal coalition across much of the south; the Republicans won substantial majorities there in the six elections preceding 2016, and Trump extended their predominance (Figure 2).

Two other clusters – 3 and 4 – are also characterised by relative stability in their constituent SMSAs' electoral landscapes, but without either party dominating a substantial proportion of the precincts. Cluster 3 – *Stable Evenly-Divided Cities* – comprises 92 SMSAs, widely distributed through

the country though with a strong presence in the South Atlantic division. Many have relatively large Black populations (a mean of 17 per cent, the largest for any of the eight clusters), which contribute to the large and consistent percentage of the precincts returning Democratic majorities at each election. They include many of the country's largest SMSAs (the mean 2010 population was 3.8million), including Atlanta, Baltimore, Boston, Chicago, Cleveland, Dallas, Detroit, Los Angeles, Milwaukee, New Orleans, New York, Philadelphia, Pittsburgh, St Louis and Washington. The Republicans have been the smaller party there at recent elections and Trump under-performed there relative to his predecessors (i.e. Types 3 and 4 – Table 5 and Figure 2, where most of the SMSAs fall to the right of the diagonal). Nevertheless, as major metropolitan centres with diverse populations most had significant blocks of neighborhoods (about one-fifth of all precincts) where the Republican party won by a landslide at each election. (The mean percentage of Baltimore precincts reporting a Democratic landslide over the three elections was 47; the mean for Republican landslides was 23.)

Whereas the Democratic party is the larger of the two in that first cluster of SMSAs that experienced little change to their electoral geography, Republican landslides are more numerous in cluster 4 – *Stable Cities*. Fairly large places, with a mean 2010 population of just under one million, they are widely distributed across most census divisions, though with none in New England (where the Republicans have traditionally been weak in most places) and only two in the 'deep south' (the East and West South Central divisions). They include several smaller Pacific division SMSAs, such as Bakersfield, CA, Bend-Redmond, OR, and Wenatchee, WA. (The mean percentage of precincts with Democratic landslides over the three elections in Bakersfield was 21; for Republican landslides it was 50.)

Clusters 5 and 6 bring together a relatively small number of SMSAs where the percentage of precincts returning Democratic landslides declined substantially, notably between 2012 and 2016. A majority of precincts in cluster 5 – *Democratic Decline* – had Democratic majorities of 20 points or more in both 2008 and 2012, but that declined to only just over one-third in 2016 with corresponding increases of 13-15 percentage points in the number of precincts with either no landslide or a Republican landslide. Only one-in-seven precincts delivered Republican landslide victories in 2016, however, whereas half had no landslide for either party. The Republican party was in the minority during the period 1992-2012 in these fifteen SMSAs (i.e. types 4, 5 and 6 in Figure 1) but Trump outperformed his predecessors in most of them (i.e. types 5 and 6 rather than 4 – Table 5), without scoring landslide majorities in many of their precincts. They are concentrated in the East North Central, New England, and Mid Atlantic divisions – areas of traditional Democratic Party strength where Trump's appeal to relatively deprived blue-collar workers clearly resonated. Many neighborhoods in places such as Erie, PA, Duluth MN-WI, Flint, MI, and Youngstown-Warren-Boardman, OH-PA (on which see Gest, 2016), which formerly delivered landslide victories to the Democrats, were more mixed in their electoral preferences in 2016 and this was reflected in their changing precinct profiles. (In Youngstown, 59 per cent of precincts recorded a Democratic landslide in 2008 but only 19 per cent in 2016; the percentage of Republican landslides increased from 3 to 36.)

The SMSAs in cluster 6 – *Democratic-Marginal* – have similar characteristics to the previous cluster, except that many fewer precincts delivered Democratic landslides at the two elections won by Obama. There was a substantial increase in the percentage of precincts returning Republican landslides, but in 2016 these comprised less than one-in-five of the total and the cluster's main feature was the large number of precincts with no landslide across all three contests. (The percentage of Democratic landslides in Akron's precincts fell from 33 to 25 between 2008 and 2016, while the percentage with Republican landslides increased from 4 to 21: 63 per cent of the precincts returned a landslide for neither party at the former date and 54 per cent at the latter.) Including

places such as Akron, OH, Eugene, OR, Las Vegas-Henderson-Paradise, NV, Manchester-Nashua, MH, and Syracuse, NY, they were not concentrated in any one part of the country (Table 4), and Figure 2 shows that most were close to the 50 per cent Republican vote share on both axes. They were not dominated by either party over the quarter-century, therefore, and most of their neighborhoods were mixed in partisan terms at the three elections considered here.

The final pair of clusters – 7 and 8 – were characterised by growth in the percentage of precincts returning a Republican landslide, though without a corresponding decrease in the (small) number of Democratic landslide precincts. Cluster 7's SMSAs – *Republican Expansion* – were characterised by a fourfold increase in the percentage of precincts delivering Republican landslides, from 16 to 64 per cent over the three elections; again, the major growth, largely compensated by a decline in the share of precincts returning no landslide, occurred between 2012 and 2016. These are small places (a mean 2010 population of some 222,000) where the Republicans have typically performed well, but in 2016 the party dominated a very much larger portion of the residential mosaic than it had at the Obama victory elections. They are concentrated geographically, with 19 of the 40 in the East North Central division: rustbelt declining industrial centres such as Carbondale-Marion, IL, Evansville, IN-KY, Johnstown, PA, and Wheeling, WV-OH, where Trump substantially extended the Republican's dominance in many neighborhoods. (In Johnstown, the percentage of precincts with Republican landslides increased from 9 to 86 per cent over the eight years, with the percentage with Democratic landslides falling from 24 to 4.) As recently as 2008 two-thirds of all precincts in those 40 SMSAs lacked a landslide for either party but eight years later virtually the same percentage returned a Republican landslide. Most of those SMSAs delivered a Republican majority at the previous six elections, but the increase in the Republican vote in 2016 will have helped Trump win the Electoral College votes in several key swing states (12 of the 40 SMSAs are in Michigan, Ohio, Pennsylvania and Wisconsin: all were won by Obama in 2012 and Trump in 2016); as Levine (2017, 13) expressed it, 'Trump's story resonated with voters in specific areas of the country with the needed number of electoral college votes'.

Trump also significantly increased the number of Republican landslide precincts in cluster 8's 97 SMSAs, almost all of which are also places where he outperformed his predecessors (Figure 1). Many of these traditionally *Strong Republican* SMSAs are in the country's south-eastern divisions – South Atlantic, East South Central and West South Central. They include places such as Birmingham, AL, Lynchburg, VA, Mansfield, OH, and Morgantown, WV, that became strong Republican centres from the 1970s on, and where in many the Republicans have come to dominate in an increasing number of neighborhoods – although most have a block of Democratic-landslide precincts, neighborhoods where their Black and Hispanic populations are concentrated (the mean percentage Black in the 100 SMSAs was 12.5: on such places see Hochschild, 2016: Birmingham averaged just under 30 per cent of its precincts returning a Democratic landslide at each of the three elections and 64 per cent returning a Republican landslide; in Morgantown the percentage of Democratic landslide precincts fell from 19 to 9 acorss the three elections, while the percentage of Republican landslides grew from 25 to 70.).

Changing electoral geographies and SMSA population characteristics

American SMSAs differed substantially in their internal electoral mosaics at these three presidential contests, therefore. In some, the great majority of neighborhoods returned either Democratic (cluster 1) or Republican (cluster 2) landslides at all three elections, whereas others (clusters 3 and 4, with the former containing most of the country's largest, most diverse metropolitan areas) had a substantial number of precincts returning all three of Democratic landslides, Republican landslides, and no landslide for either party. Another two (clusters 5 and 6) saw the number of neighborhoods returning a Democratic landslide decline substantially, while the final pair (clusters 7 and 8) had

major increases in the percentage of neighborhoods with Republican landslides. Did those groupings differ in not only their relative location within the country, as discussed above, but also in their population characteristics?

To address that question we assembled data from census and other sources for most of the SMSAs being studied on ten variables relevant to the ecological study of voting patterns, including a classification of the composition of their workforces developed by Florida and Mellander (2015).[4] Five of the ten – the percentage of the workforce in the creative class, the percentage of adults with degrees, the percentage of the population either Black or Hispanic, and the median household income – proved the best discriminators between SMSAs in the various clusters.[5] One difficulty in analysing such data, however, is that each party draws support from more than one constituency, so that places where one is strong might differ in their population characteristics depending on which constituency is concentrated there.[6] This is illustrated by the SMSAs in cluster 1, where the Democrats dominated most neighborhoods. The party gained strong support at all three elections not only from ethnic minorities, especially Blacks and Hispanics, but also from what Florida (2017) terms the creative class – the well-qualified and -paid professional and managerial occupations. Thus, for example, five of the ten SMSAs in that cluster for which we have data had significantly above average percentages of their adult populations with degrees, six had significantly above average median household incomes, and three (Boulder, San Francisco and San Jose) had significantly above average percentages of their workforce in the creative class. But two had significantly above average percentages of their households in poverty – both of which (as was the case with three other SMSAs in the cluster) also had significantly above-average percentages of Hispanics. Only one of the ten SMSAs did not stand out for its concentration of either Hispanics or creative class members.

Turning to the clusters of SMSAs which experienced very substantial increases in the percentage of their precincts returning Republican landslides, and where a substantial majority delivered a landslide in 2016 (i.e. clusters 7 and 8), a common feature was the relative absence of the creative class. Of the 34 SMSAs in cluster 7, for example, where the percentage of precincts returning a Republican landslide increased from an average of 16.2 in 2008 to 64.3 in 2016, fully 27 had less than the mean for all SMSAs in the creative class. In addition, 27 had less than the mean percentage of adults with a degree and 23 had less than the mean median household income; in contrast, only three of the SMSAs had an above-average percentage of their population either Black or Hispanic. Similarly, in cluster 8 – where the percentage of precincts returning a Republican landslide increased from 55 in 2008 to 72 in 2016 – 56 of the 82 SMSAs had a below-average percentage in the creative class, 59 had a below-average percentage with degrees, and 61 had a below average median household income; 34 of the 82 SMSAs also had a below-average percentage of their population either Black or Hispanic. In general, therefore, the SMSAs where there was much greater support for Trump in 2016 than for the Republican candidates in 2008 and 2012 were characterised by relatively few well-paid, well-qualified individuals and also of Blacks and Hispanics. These SMSAs, which experienced the greatest changes in their electoral mosaics favouring the Republican party, were characterised by white populations with relatively poor prospects in a globalised economy – to whom Trump appealed with his 'America first' campaign.

These two clusters of SMSAs had many similarities to those in cluster 2, where most of the precincts delivered Republican landslides at all three elections. Of the 34 for which data are

[4] We are grateful to Professors Florida and Mellander for making these data available to us.
[5] The other variables examined were: percentage in the working class; percentage aged over 65; percentage of households in poverty; percentage of white households in poverty; and percentage unemployed.
[6] Because of this, formal statistical analyses – such as analyses of variance – produce misleading results, so have not been reported here.

available, only six had above-average percentages with degrees, seven above-average median household incomes, and just one an above-average percentage in the creative class. Some of these Republican strongholds had relatively large Black plus Hispanic populations, however; 14 of the 34 had above-average percentages in those groups, mainly Hispanics – 7 of the 14 are in Texas.

The SMSAs in clusters 5 and 6 were characterised by substantial declines in the percentage of their precincts returning Democratic landslides but relatively few – even in 2016 – returning Republican landslides; the majority of precincts in both clusters returned a landslide for neither party at the last of the three elections. The main characteristic of both groups was the relatively small size of their Black and Hispanic populations; they formed an above-average percentage of the population in only two of the 15 SMSAs for which data were available in cluster 5 and four of the 34 in cluster 6. They don't stand out on the other variables – six of the 15 in cluster 5 had above average percentages in the creative class, for example; the number of neighborhoods returning Democratic landslides declined because of the absence of substantial ethnic minority enclaves but their workforce characteristics (relatively large percentages with degrees and with above average incomes in many places) meant that there were few transitions to Republican landslide neighborhoods.

Inside SMSAs

The data presented so far refer to entire SMSAs, but did the changes noted in some of the clusters occur across the entire metropolitan areas, or were they concentrated in certain segments of them only? To explore such intra-metropolitan variations, this final section uses a classification of counties along a metropolitan-urban-rural continuum developed by the National Center for Health Statistics (Ingram and Franco, 2013). This has six categories, the first two of which refer to multi-county SMSAs, dividing them into their central cities and suburbs:

1. *Large Central Metro* – these counties are parts of Metropolitan Statistical Areas (SMSAs) with more than one million inhabitants; they either contain the entire population of the SMSA's central cities, or have their entire population in the SMSA's largest central city, or contain at least 250,000 of the population of one of the SMSA's principal cities.
2. *Large Fringe Metro* – these are counties in SMSAs with more than one million inhabitants that did not qualify as Large Central Metros (i.e. they are basically suburban areas of large metropolises).

Multi-county SMSAs formed only a minority of those in each cluster – with by far the largest in cluster 3 – and they were not necessarily representative of all cluster members. Nevertheless, the data in Table 6 suggest a very clear central city-suburban divide in the majority of SMSAs, and especially those clusters where there was most change in their precinct profiles across the three elections.

In cluster 6 (*Democratic Marginal*), for example, the percentage of precincts returning a Democratic landslide changed relatively little in either of the two county types, but there was a major change in the suburbs regarding Republican landslides. Whereas 12.5 per cent of all suburban precincts in the two SMSAs returned a Republican landslide in 2008 and 16.1 per cent in 2012, there was a tripling to 46.7 per cent in 2016, with a consequential decline in the percentage of precincts returning no landslide. Within those SMSAs the Democratic stronghold neighborhoods, concentrated in the central city, remained largely in place, while in the suburbs many neighborhoods where neither party won by a landslide in 2008 and 2012 became dominated by Trump's supporters in 2016.

Similar patterns characterised clusters 3, 4 and 8, although the change in the percentage of suburban precincts returning Republican landslides was not as extreme. Little altered in the central cities, where the percentage of neighborhoods dominated by Democratic party voters remained stable. But greater polarization characterised the suburbs, where a substantial number of neighborhoods in which neither party dominated in 2008 became Republican landslides in 2016. In cluster 3 which, as noted above, contains most of the country's largest SMSAs, the suburbs have a much larger percentage of precincts returning Democratic landslides at all three elections than SMSAs in any other cluster, undoubtedly reflecting the recent suburbanization of Blacks in those places. In the 14-county Chicago SMSA, for example, 79 per cent of precincts in Cook County (which includes the City of Chicago) returned a Democratic landslide in 2008 and 81 per cent in 2016. In the four inner suburban counties bordering on Cook, on average 42 per cent of precincts had Democratic landslides in 2008 and only 4.5 per cent Republican landslides; eight years later the respective averages were 43.5 and 10. The main change came in the outer suburban counties where on average 22.3 per cent of precincts returned a Democratic landslide in 2008, compared to 14.2 in 2016. By contrast, the average percentage of precincts there returning a Republican landslide increased from 30 to 45.8, with every precinct in two of the counties returning a Republican landslide in 2016.[7]

In the only cluster – 5 (*Democratic Decline*) – where the percentage of precincts returning Democratic landslides declined substantially in both the central cities and the suburbs (albeit we have data for only two SMSAs) there was no corresponding increase in the percentage of precincts returning Republican landslides. Instead, neighborhood residents there became more evenly divided between the two parties (as Gest, 2016, reported for Youngstown[8]).

Conclusions

By retaining the support of a very large percentage of voters who had voted for the Republican Party's presidential candidates at the previous six elections, Trump won all of the traditionally 'red states' in 2016. Although his opponent defeated him in their respective shares of the national vote total, his additional support in several swing states brought victory in the Electoral College. That additional support was gained from voters many of whom had not voted for a Republican candidate at the 2008 and 2012 presidential elections, attracted by the policies of an 'outsider' (Richards, 2017) aimed at those members of the precariat (Standing, 2016) whose life chances had been reduced as a consequence of globalisation-induced deindustrialisation (on which see Goodhart, 2016).

That change in the pattern of support for the Republican party at the 2016 presidential election was clearly expressed in the country's electoral landscape; its growth was much greater in some SMSAs than others. It was also reflected in changes to the landscape at a finer-grained spatial scale, represented here by the precincts into which all counties are divided for electoral administration purposes, most of which are of a size (c.750-800 voters) commensurate with that of city neighborhoods. Using Bishop's (2009) measure of spatial polarization in voting patterns – whether or not a precinct delivered a landslide victory (defined as a gap of twenty percentage points

[7] Of course, within the suburban belt there are several well-established cities, such as Gary, IN, Aurora, IL, and Kenosha, WI, with extensive neighborhoods that deliver Democratic landslides.

[8] With a population of some 560,000 the Youngstown-Warren-Boardman SMSA is not divided into a central city and suburbs in the NCHS classification. Youngstown itself is in Mahoning County where the percentage of precincts returning a Democratic landslide fell from 60 in 2008 to 24 in 2016: the percentages of precincts returning a Republican landslide or no landslide increased from 5 to 26 and 36 t0 50 respectively. In Mercer and Turnbull counties the respective declines in the percentage of Democratic precinct landslides were 30 to 13 and 58 to 15; Republican landslide percentages increased from 30 to 63 and 2 to 30 respectively.

or more in the two parties' shares of their joint vote total) – SMSAs were classified according to their profiles across the latest three presidential elections to identify the extent of any changes in their electoral mosaics. SMSAS in four of the eight clusters experienced little change in the percentage of precincts that delivered either a Republican or a Democratic landslide, or no landslide. The other four comprised SMSAs that experienced considerable change in their electoral landscapes, varying only in the extent of the decline in the number of Democratic landslides, especially between 2012 and 2016, and the increase in the number of precincts returning either a Republican landslide or no landslide for either party. The largest increases in the share of Republican landslides were in SMSAs in the country's rustbelt, where blue-collar working-class voters have experienced the greatest reductions in their well-being and life chances. There has been increased polarization to the country's electoral landscape over recent presidential elections, therefore, but it has been more pronounced in some metropolitan areas than others.

Geography is crucial to the outcome of many types of election. Trump won the US presidency in 2016 not because he won most votes – his opponent got more – but because those he won were geographically better distributed. By increasing support for the Republican party in places, including within a substantial number of metropolitan areas, that enabled him to outvote his opponent in key 'swing states', Trump was successful in the Electoral College procedure for translating votes into seats – a success clearly inscribed in the electoral mosaics of those SMSAs. Where Trump triumphed, a significant number of neighborhoods changed their electoral partisanship; where he didn't, there was little change to their profiles from those observed at the previous two presidential elections. Geography was both fundamental to, and clearly reflective of, the changes that sent Trump to the White House.

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Table 1.
The distribution of the six voting change types of SMSA (identified in Figure 1) across the US nine census divisions.

	Change Type						
Division	1	2	3	4	5	6	TOTAL
New England	0	0	0	5	7	3	64
Mid Atlantic	14	2	1	6	5	5	28
South Atlantic	38	13	11	10	1	6	33
East North Central	19	9	4	8	4	20	34
East South Central	21	5	1	0	0	1	15
West North Central	12	6	1	6	3	2	46
West South Central	29	6	2	5	1	1	79
Mountain	14	7	4	7	1	1	30
Pacific	7	9	4	22	3	1	44
TOTAL	154	57	28	69	25	40	373

Table 2.
The number of precincts in the 373 SMSAs that returned a Democratic landslide, a Republican landslide, or no landslide at the 2008, 2012 and 2016 US presidential elections (percentages of the totals in brackets)

	Democratic	Republican	Neither	TOTAL
2008	59,056	29,235	58,306	146,597
	(40.3)	(19.9)	(39.8)	
2012	52,145	33,880	47,097	133,132
	(39.2)	(25.4)	(35.4)	
2016	54,716	37,063	43,428	135,207
	(40.5)	(27.4)	(32.1)	

Table 3.
The profiles of the eight clusters of SMSAs according to the percentage of their precincts delivering each type of landslide at the three US presidential elections, 2012-2016

	Cluster							
Landslides (%)	1	2	3	4	5	6	7	8
Democratic 2008	90.5	5.5	44.0	17.0	63.4	34.9	16.5	12.5
Democratic 2012	88.2	5.4	42.7	15.8	54.5	27.9	11.6	11.5
Democratic 2016	85.0	5.5	44.8	16.4	34.3	22.9	6.7	10.8
Republican 2008	1.0	83.8	18.1	29.4	1.3	3.5	16.2	55.3
Republican 2012	2.1	86.3	22.6	39.9	3.5	6.4	34.1	64.6
Republican 2016	1.9	87.3	24.3	40.9	14.8	19.7	64.3	71.8
No landslide 2008	8.5	10.8	37.9	53.3	35.3	61.6	67.3	32.2
No landslide 2012	9.8	8.3	34.7	44.3	42.0	65.8	54.3	23.9
No landslide 2016	13.2	7.2	30.9	42.8	50.9	57.5	29.0	17.4
Number of SMSAs	11	40	92	43	15	35	40	97

Table 4.
The distribution of the eight clusters of SMSAs (identified in Table 3) across the nine US census divisions.

	Cluster								
Division	1	2	3	4	5	6	7	8	Total
New England	1	0	3	0	4	6	1	0	15
Mid Atlantic	0	0	8	5	3	5	5	7	33
South Atlantic	0	7	24	7	0	2	5	34	79
East North Central	0	1	15	9	6	8	19	6	64
East South Central	0	8	3	1	0	0	1	15	28
West North Central	0	4	5	5	1	5	4	6	30
West South Central	2	12	11	1	0	0	0	18	44
Mountain	2	8	8	4	0	2	3	7	34
Pacific	6	0	15	11	1	7	2	4	46
Number of SMSAs	11	40	92	43	15	35	40	97	373

Table 5.
The distribution of the eight clusters of SMSAs (identified in Table 3) across the six vote change types identified in Table 1 and Figure 1.

	Cluster								
Change Type	1	2	3	4	5	6	7	8	Total
1	0	36	2	14	0	3	25	74	154
2	0	4	10	23	0	0	1	19	57
3	0	0	20	3	0	5	0	0	28
4	10	0	45	0	4	10	0	0	69
5	1	0	7	0	7	10	0	0	25
6	0	0	8	3	4	7	14	4	40
Number of SMSAs	11	40	92	43	15	35	40	97	373

Table 6.
The percentage of precincts in SMSAs in the eight clusters identified in Table 3 returning Democratic landslides, Republican landslides or no landslide at the 2008, 2012 and 2016 US presidential elections

	Cluster							
Landslides (%)	1	2	3	4	5	6	7	8
Democratic 2008								
Large Central Metro	92.5	-	62.1	28.2	72.5	57.5	-	40.0
Large Fringe Metro	78.1	-	20.2	5.9	57.9	15.1	-	4.1
Democratic 2012								
Large Central Metro	90.6	-	63.4	27.2	57.4	51.1	-	39.9
Large Fringe Metro	72.8	-	18.9	5.6	45.7	10.4	-	3.8
Democratic 2016								
Large Central Metro	83.7	-	68.0	30.6	50.8	50.5	-	44.9
Large Fringe Metro	77.5	-	18.6	4.6	31.0	12.1	-	3.0
Republican 2008								
Large Central Metro	1.6	-	9.6	18.4	0.3	4.5	-	29.3
Large Fringe Metro	4.7	-	36.5	42.3	0.0	12.5	-	74.4
Republican 2012								
Large Central Metro	1.9	-	11.1	29.0	0.3	5.8	-	33.0
Large Fringe Metro	5.2	-	44.6	57.9	0.2	16.1	-	80.5
Republican 2016								
Large Central Metro	1.0	-	8.4	22.8	3.2	8.3	-	24.8
Large Fringe Metro	4.0	-	54.3	76.5	3.3	46.7	-	87.9
No landslide 2008								
Large Central Metro	5.9	-	28.3	53.4	27.2	38.0	-	30.7
Large Fringe Metro	17.1	-	43.3	51.9	42.1	72.4	-	21.4
No landslide 2012								
Large Central Metro	7.5	-	25.6	43.9	42.3	43.1	-	27.1
Large Fringe Metro	22.0	-	36.5	36.4	54.1	73.5	-	15.6
No landslide 2016								
Large Central Metro	15.3	-	23.6	46.6	46.0	41.2	-	30.3
Large Fringe Metro	18.5	-	27.1	19.0	65.7	41.2	-	9.1
Number of SMSAs	2	0	32	7	2	3	0	6

Figure 1. SMSAs according to their mean percentage voting Republican at the six US presidential elections 1992-2012 and the percentage voting Republican at the 2016 election, classified into six types (for details of those types, see text).

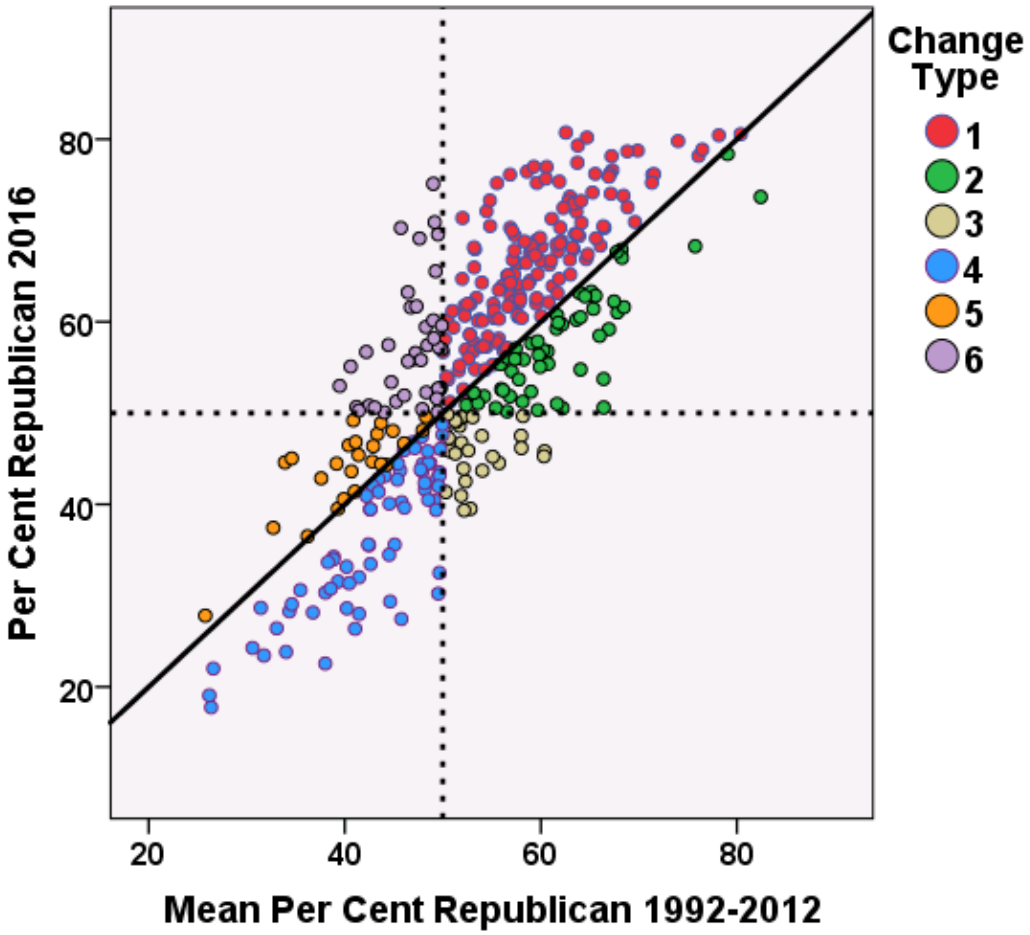

Figure 2. SMSAs according to their mean percentage voting Republican at the six US presidential elections 1992-2012 and the percentage voting Republican at the 2016 election, classified into the eight clusters identified in Table 3.